No. 44 December 1, 1958

FISH AND WILDLIFE MANAGEMENT REPORT

PROVINCE OF ONTARIO
DEPARTMENT OF LANDS AND FORESTS
Division of Fish and Wildlife

Hon. J. W. Spooner
Minister

F. A. MacDougall
Deputy Minister

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(THESE REPORTS ARE FOR INTRA-DEPARTMENTAL
INFORMATION AND NOT FOR PUBLICATION)

LAKE SIMCOE DISTRICT SPECIAL BEAVER SURVEY, 1958

by
J. S. Dorland

During the winter of 1957-58 and the spring of 1958 the third survey of known beaver colonies on patented land was carried out by Conservation Officers with the help of cooperative sportsmen and farmers.

All colonies were recorded by township, lot and concession and later plotted on a district map.

On completion of the survey it was found that we again had another large increase in beaver colonies throughout the district. The records showed that by April 1st, 1958 the district, exclusive of Baxter Township, possessed 330 known beaver houses, 149 known beaver dams and 35 known beaver bank colonies. This is an increase of 263 known beaver colonies over the first survey made in 1952 which also excluded Baxter Township. This year's survey of Baxter Township shows 43 known beaver houses and two known dams.

Considering, as we have previously done, that the average beaver house contains four beaver and the bank colonies two, we now have approximately 1600 potential beaver on patented land within our district.

On concluding our plotting of beaver colonies it revealed no change in the direction the beaver are moving which is in a southwesterly direction across our district since our first recording in 1952, which showed beaver mostly in northern parts of Ontario and Simcoe Counties.

Although endeavours have been made to halt the movement of beaver southerly towards the agricultural lands of South Simcoe, Dufferin and Peel Counties, it was found that these little fur-bearers could move faster than the humans who were after them. To-day they are becoming well spotted through South Simcoe and Dufferin County and are gradually spreading southward along the Credit River in Peel County.

Beaver damage on patented land at the present time is confined mostly to the cutting of trees around summer cottages, waterways and the flooding of low lying areas.

During the 1957-58 season 81 trappers harvested 726 beaver off patented land in the district. Although these figures show we are harvesting close to half of our known total the number of beaver throughout the district continues to rise. This rise however, is in proportion to the number of known colonies, as, since 1954-55 census the percentage of increase in beaver is around 70% whereas the percentage of increase in harvest during the same period is 68% only slightly less. It must be noted that although figures show

quite an increase in known colonies it is questionable whether or not these colonies were not there three or six years ago and are just now being located. In areas such as Matchedash, Baxter, Orillia, Rama Townships and around Scugog Lake it is the writer's opinion that there are considerable numbers of colonies still unknown to us.

Attached are three maps showing beaver colonies and dams recorded during the 1952, 1955 and 1958 surveys which gives a fair picture of the southwesterly movement of beaver across our district.

Also attached are three charts showing figures on - (1) Population of beaver. (2) Harvest of beaver. (3) Number of beaver trappers.

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CHART I - Known Beaver Colonies, Harvest, Etc., on Patented Land, Lake Simcoe District, 1957-58.

County	Township	Houses	Dams	Bank Beaver	Estim. Pop.	No. Trappers	Quota	1957-58 Harvest
Dufferin	E. Garafraxa	-	-	1	2	-	-	-
	Mulmur	1	1	1	4	-	-	-
	Melancthon	2	2	-	8	1	3	1
	Mona	2	1	-	8	-	-	-
Total		5	4	2	22	1	3	1
Ontario	Rama	39	15	1	158	8	127	126
	Mara	35	13	-	140	7	41	13
	Thora	8	2	2	36	3	10	3
	Brock	37	14	-	148	10	52	39
	Scugog	3	-	-	12	-	-	-
	Reach	58	30	4	240	10	105	64
	E. Whitby	3	3	1	12	-	-	-
	Whitby	2	-	-	8	1	2	-
	Uxbridge	7	5	-	28	5	49	36
	Scott	19	12	-	76	7	61	29
Total		211	94	8	858	51	447	310
Peel	Caledon	5	3	-	20	-	-	-
Total		5	3	-	20	-	-	-

Chart I cont.

County	Township	Houses	Dams	Bank Beaver	Estim. Pop.	No. Trappers	Quota	1957-58 Harvest
Simcoe	Sunnidale	-	-	5	10	2	17	17
	Tossoronto	2	2	-	8	1	3	3
	Innisfil	1	1	-	4	1	2	4
	Essa	3	1	-	12	1	6	6
	Tecumseth	-	-	1	2	1	2	2
	Vespra	5	4	2	24	4	22	17
	Oro	7	5	1	30	-	-	-
	Medonte	22	4	-	88	2	21	18
	Flos	8	6	-	32	1	10	5
	Tiny	13	8	-	52	2	17	7
	Tay	15	2	2	64	3	26	24
	Matchedash	11	1	-	44	5	51	37
	Orillia	10	4	5	50	8	105	84
Total		97	38	16	470	31	282	224
York	King	1	-	1	6	2	12	2
	Whitchurch	4	6	-	16	1	17	17
	E. Gwillimbury	3	3	4	20	1	13	10
	N. Gwillimbury	-	-	3	6	1	4	1
	Georgina	4	3	1	18	5	45	32
Total		12	12	9	66	10	91	62
Baxter Township		43	2	-	172	12	158	129
Lake Simcoe District		373	151	35	1608	105	991	726

CHART II - Lake Simcoe District Beaver Harvest Survey

Year	Known Number Colonies	Quotas	Harvest	Beaver Trappers
1950-51	-	64	21	7
1951-52	102	106	59	17
1952-53	-	176	104	18
1953-54	-	365	208	41
1954-55	251	572	495	67
1955-56	-	758	677	101
1956-57	-	897	714	90
1957-58	365	991	726	81

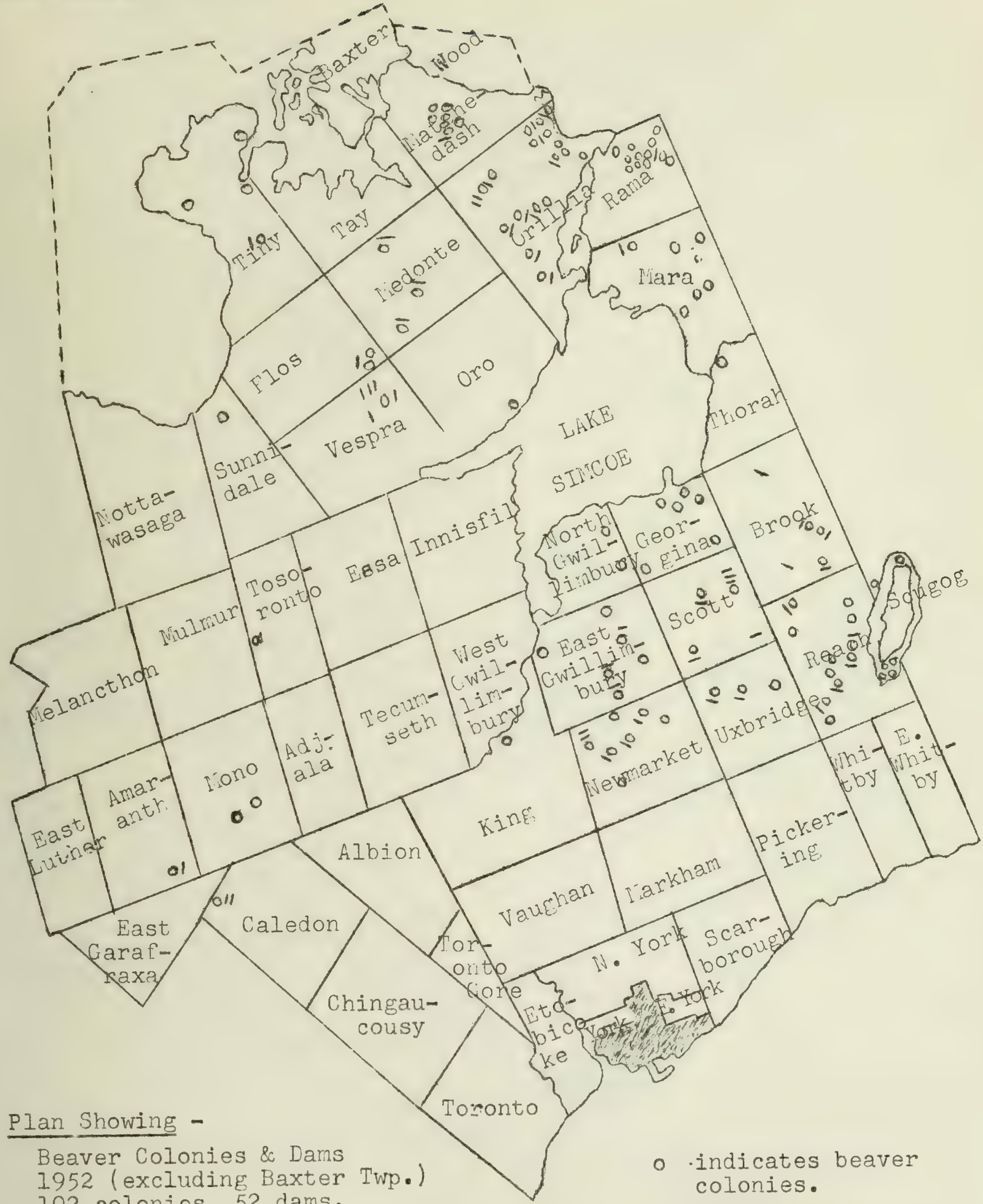
It will be noted that the total number of trappers during 1957-58 is listed above as 81, yet on a previous chart it is shown as 105. This latter figure of 105 is arrived at when it is totalled by townships. To further clarify (a single trapper may trap in more than one township) thus a county may show by townships that it had a total of 51 trappers trapping yet in actual count records show only 42.

CHART III - Beaver Trappers - Lake Simcoe District
Showing number per county per year.

	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58
Dufferin							1	1
Ontario	2	7	11	22	34	46	40	42
Simcoe (including Baxter)	2	6	4	16	26	45	38	28
York	3	4	3	2	7	10	11	10
Total	7	17	18	40	67	101	90	81

The above figures signify the number of trappers given beaver quotas and is the total number of beaver trappers in the district by counties.

LAKE SIMCOE DISTRICT

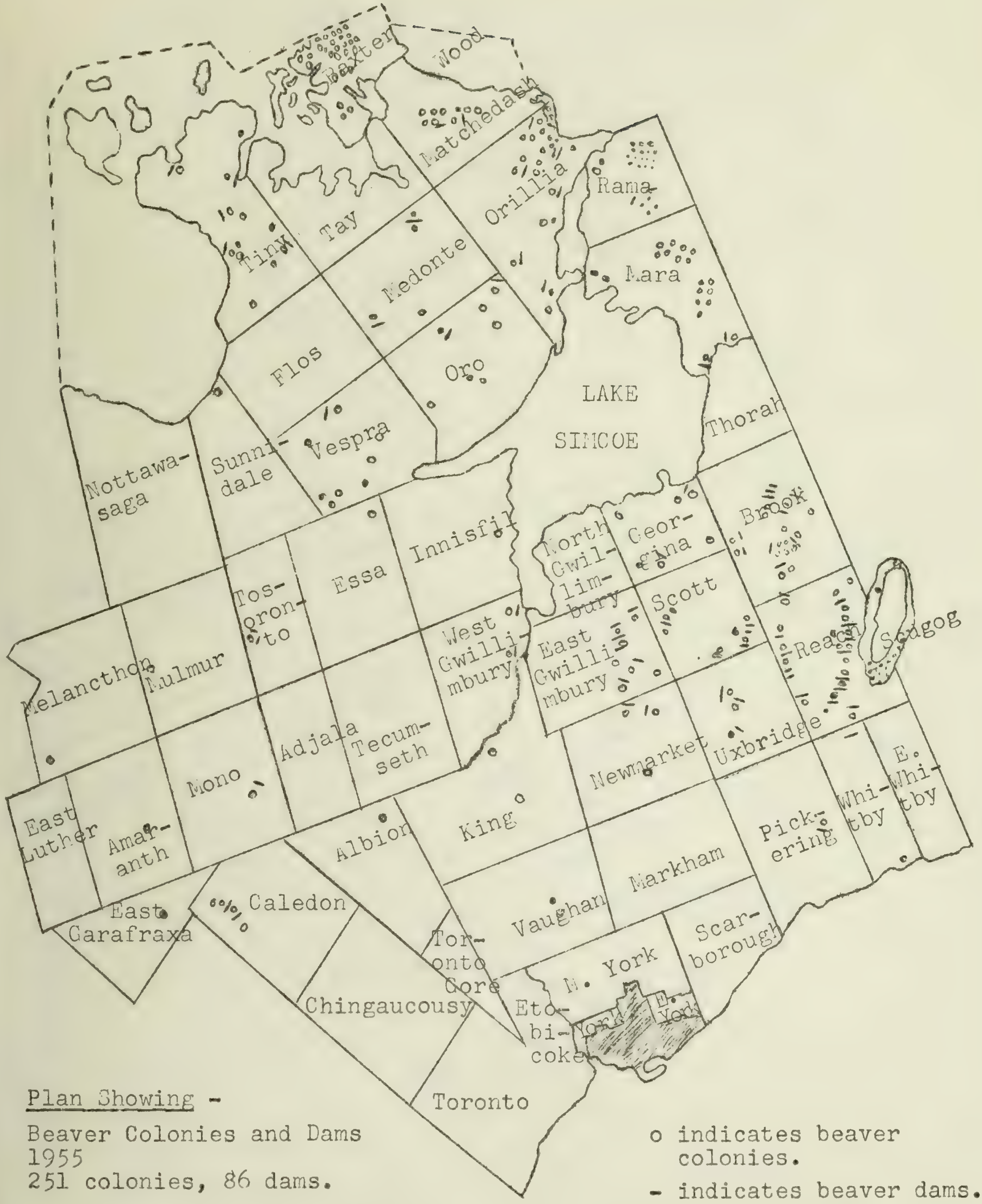


Plan Showing -

Beaver Colonies & Dams
1952 (excluding Baxter Twp.)
102 colonies, 52 dams.

o indicates beaver colonies.

- indicates beaver dams.

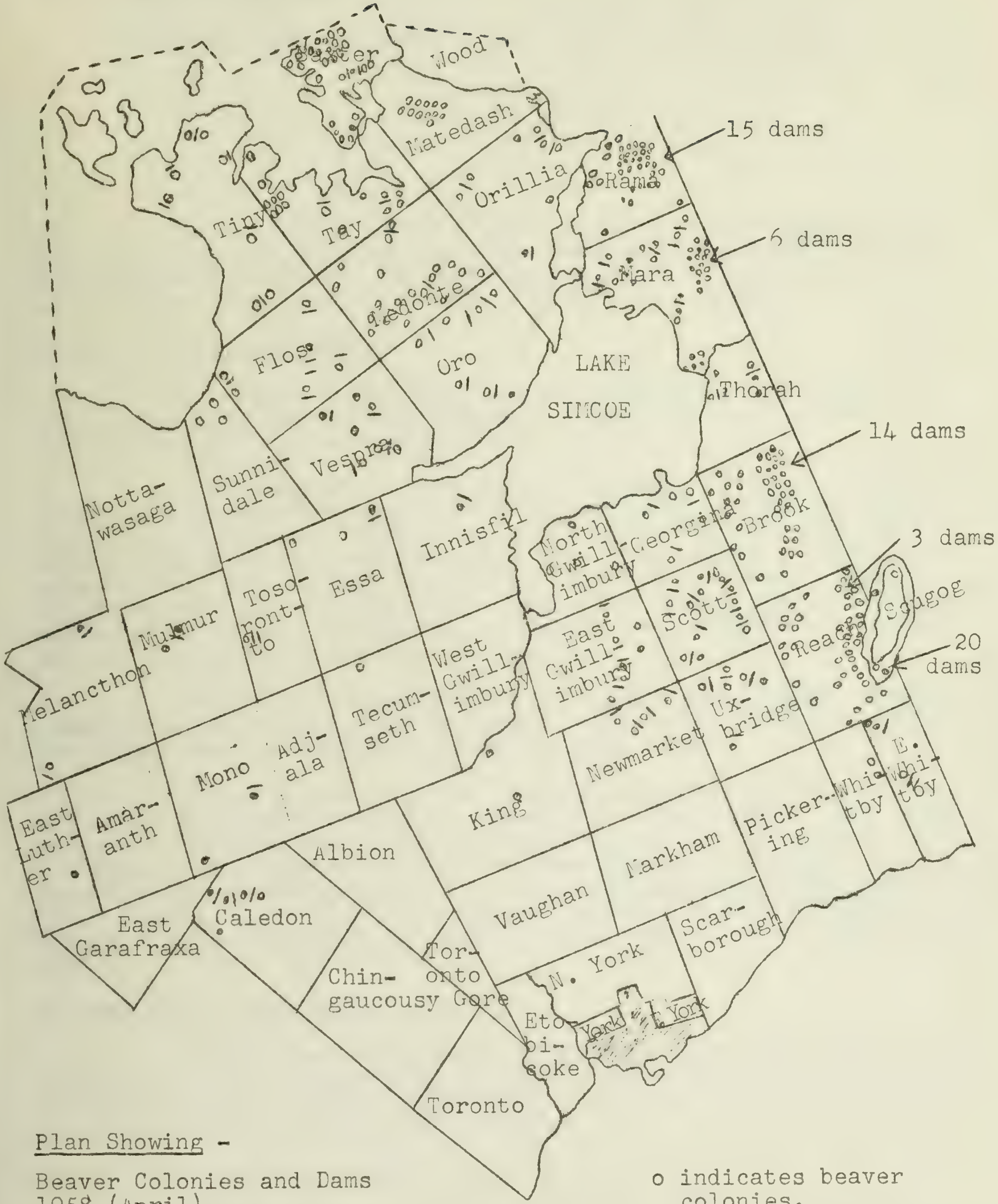


Plan Showing -

Beaver Colonies and Dams
1955
251 colonies, 86 dams.

o indicates beaver colonies.

- indicates beaver dams.



Plan Showing -

Beaver Colonies and Dams
1958 (April).
365 colonies, 151 dams
(exclusive of Baxter Twp.)

o indicates beaver colonies.

- indicates beaver dams.

NOTES ON NORTHERN SEALS AND WHALES ALONG THE HUDSON BAY COAST BETWEEN CAPE CHURCHILL AND CAPE HENRIETTA MARIA

by
T. M. Nicholl

The following prepared list of observations resulted from field work along the Hudson Bay Coast between Cape Churchill and Cape Henrietta Maria and the off-shore islands. (The coast refers to the coast line between the above mentioned places).

Walrus - Odobenus rosmarus

This species is found occasionally along the coast, but is more numerous and a regular summer inhabitant in the Cape Henrietta Maria and Bear Island area.

From observations and Indian reports, it would appear that walrus are only rarely seen between Cape Churchill and the Sutton River. A few (4 or 5) were observed by the writer off the Owl River - Nelson Shoal coastline in July, 1954. These creatures were some 20 miles out to sea, and in all probability walrus frequent the rocky reef off the Owl River coast. One walrus was seen in the Nelson River estuary in the fall of 1954. Kaska Indians reported the occasional walrus on the Pen Islands.

The Winisk and Attawapiskat Indians have always reported numerous walrus in the Cape Henrietta Maria area, but it is felt that these reports have been slightly exaggerated.

In the summer of 1955, landings were made on Bear Island and a few walrus were observed around the rocky shores. One brute charged a landing craft much to the horror of its occupants. The following year a permanent base was established on the Island. Several flights were carried out over the Islands and Cape Henrietta Maria during the fall of 1956 and the summer and fall of 1957, though a few walrus were observed at all times no great numbers were seen.

Bearded Seal - Erignathus barbarus

Perhaps the most common of all species found along the coast; this seal prefers the deep tidal river estuaries and is very numerous in the late summer and fall. It is not uncommon to find seals 20-30 miles up the larger rivers.

Ringed Seal - Phoca hispida

Generally found in the tidal river estuaries. Can be observed during the open water season, but more common in the fall. A nervous seal and difficult to hunt.

ADDITIONAL INFORMATION ON SAMPLING THE WESTERN REGION DEER HERD

by
R. Boultbee

In March 1957, I wrote you outlining a method of estimating the proper size of deer samples.* The basis was 1,297 deer one and a half years of age and older collected in a three year period. I have done considerable work on the subject since my first letter. The basis has been extended to include 2,338 deer, including fawns, over a five year period. These deer were grouped into twenty-nine samples averaging 80.62 deer each, the smallest sample being fifty-two and the largest one hundred and thirty-two. The results apply directly to the Western Region herd but probably are suitable for any similar herd.

I have also found a much improved procedure for working up the data. I am appending some notes to show some of its main features. Incidentally the procedure is the same as for working up the data of the aerial moose census you proposed when you met with us on July 22nd.

The equation for 95 percent confidence limits is:

$$\text{Sample size} = \frac{562.45}{x^2}$$

where x is the acceptable margin of error.

The equation for 99 percent confidence limits is:

$$\text{Sample size} = \frac{984.47}{x^2}$$

As an example, suppose you would like to keep the margin of error down to two per cent with 95 per cent confidence limits. The necessary sample size is found by squaring the figure 2 and dividing it into 562.45. The answer is 140.61 or say 150 deer. The 95 per cent confidence limits say that the margin of error will exceed two per cent only five times in a century. To exceed two per cent error only once in a century requires a sample of 984.47/4 = 246.12 or say 250 deer.

There may be a temptation to accept, say, a five per cent margin of error and stop with a sample of 562.45/25 = 22.5 deer. This temptation must be avoided. In any kind of sampling, when numbers are reduced to around 40 or 30, a distortion creeps in and becomes rapidly more important with further reductions. It was for this reason that I kept the minimum sample in the study at not less than 50.

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* See F.& W. Mgt. Report No. 36, Aug 1, 1957.

The meaning of "acceptable margin of error" is that the individual margins of error of age classes will compensate, when added, to not more than the chosen amount.

It should also be noted that even a very large sample will be meaningless unless the animals are aged as they come. When the pressure is on there may be temptations to be selective. A conscious effort is needed to keep sampling on an impersonal basis. If it becomes necessary to pass up some deer it should also be done on an as they come basis.

Notes on Statistical Procedure

The twenty-nine samples were classified by age-groups and check year groups. This gave 221 sub groups classified in strata of age, year and sample size. The standard procedure of eliminating variance between strata was applied to the 221 sub groups to give the following analysis of variance:

Source of Variance	Sum of Squares	Degrees Freedom	Mean Squares	Variance Ratio	Significance
Between Sub Groups	16,811.86	143	117.57	9.80	Better than 0.1% point
Within Sub Groups	924.00	77	12.00		
		220	80.62		

The mean square within sub groups is the so-called experimental error.

The average per sub group is 2338/221 = 10.58 deer.
The average sample is 2338/29 = 80.62 deer.
The average sample contains 80.62/10.58 = 7.62 age classes.
The variance of the samples is (7.62) (12.00) = 91.44.
The standard error of the samples is the square root of 91.44 which is 9.56.
The percentage standard error of the samples (9.56) (100)/(80.62) = 11.858.
The percentage variance of the samples is 11.858 squared which is 140.61.
The percentage variance of the mean sample is 140.61/n where n is sample size.

This last expression is the basis of the sample size equations. To attach 95 per cent confidence limits the expression is multiplied by 4. To attach 99 per cent confidence limits it is multiplied by 7.001.

COMBINING AGE-CLASS DATA FROM DIFFERENT SOURCES

(Western Region Deer Herd)

by
R. Boultbee

Prior to 1957 the annual deer hunt check in the Western Region was operated at one point, a few miles west of Fort Frances. This was a tactically located check point for a large portion of the deer shot in the western Region by non-residents.

In 1957 each of the three Districts in the Region ran its own check. Sioux Lookout District ran a check station on the Red Lake road. Kenora District operated a check station at Nestor Falls and in addition checked twenty-five heads in a locker plant in Kenora. Fort Frances contacted hunters in the field.

Before 1957 all deer going through the single check station were treated as constituting a single sample although they came from widely separated localities. In 1957 the four district checks made it necessary to consider whether or not they could be combined to make one large sample. If the proportions of the four samples differ by more than the play of chance they should not be combined.

The samples are given in table one.

TABLE I - 1957 Deer Checks

	Age Classes									
Source	½	1½	2½	3½	4½	5½	6½	7½	8½	Totals
Red Lake Road	52	18	12	25	20	12	1	2	-	142
Nestor Falls	60	17	15	23	26	12	6	1	-	160
Kenora Locker	9	5	3	3	3	1	-	1	-	25
Fort Frances	12	14	15	19	17	3	1	2	1	84

There are several ways of approaching the problem. The Nestor Falls sample is the largest and most central. In this paper the procedure will be to find if the other samples could have come from a population with the same proportions as the Nestor Falls sample.

The best testing method is to use binomial confidence limits. These are explained in most good texts on statistics. A good reference is "Elementary Medical Statistics" by D. Mainland, published by the W. B. Saunders Co. of Philadelphia. The Canadian agent is McAinsh and Co., Ltd., Toronto.

Table Two summarizes the comparisons of fawns with older age classes.

TABLE II - Significance Tests of Fawn Proportions

Source	No. of Fawns	Percent of Fawns	99% Confidence Limits
Red Lake Road	52	36.6	26.6% to 47.5%
Nestor Falls	60	37.5	
Kenora Locker	9	36.0	14.1% to 63.5%
Fort Frances	12	14.3	6.0% to 26.6%

Table Two shows that the Red Lake Road sample of 142 deer came from a population in which fawns occupy from 26.6 to 47.5 percent of the herd. This range easily contains the Nestor Falls fawn percentage of 37.5. Similarly the locker plant fawn range of 14.1 percent to 63.5 percent also contains the Nestor Falls fawn percentage. The proportion of fawns in Fort Frances District is 14.3 percent and the upper confidence limit is 26.6 percent. This range falls considerably short of containing the proportion of fawns at Nestor Falls.

Table Three summarizes all age classes in a similar manner. For each age class all younger age classes were left out of the comparison, and as a result, table three compares each age class with what is left of its parent group.

TABLE III - Summary of 99 Percent Confidence Limits (Percentage).

	Age Classes						
Source	½	1½	2½	3½	4½	5½	6½
Red Lake Road	26.6 to 47.5	10.5 to 32.8	7.2 to 30.8	26.0 to 59.0	34.5 to 77.7	43.9 to 97.6	0.2 to 95.9
Nestor Falls	37.5	20.5	18.1	33.8	57.8	63.2	85.7
Kenora Locker	14.1 to 63.5	7.5 to 65.9	3.3 to 69.4	4.8 to 83.0	8.3 to 97.7	0.2 to 99.8	0.0 to 99.5
Fort Frances	6.0 to 26.6	9.0 to 34.0	13.0 to 42.5	25.2 to 63.2	42.7 to 90.7	5.5 to 88.3	11.1 to 99.9

Table Three shows that the samples from the Red Lake Road the locker plant and Nestor Falls can be combined. The fawn proportion in the Fort Frances sample prevents it from being combined.

The combination of Samples is given in table four.

TABLE IV - Pooled Samples

	Age Classes									
Sources	½	1½	2½	3½	4½	5½	6½	7½	8½	Totals
Sioux Lkt. & Kenora Dists.	121	40	30	51	49	25	7	4	-	327
Fort Frances District	12	14	15	19	17	3	1	2	1	84

The comparisons show that the fawn proportion in the Fort Frances herd is different, but do not give the reason. Fort Frances staff think hunter selectivity is not a factor. The District Biologist has believed for some time that the farm area west of Fort Frances is ecologically an island. It is open country and the climate is not the same as in the area immediately north. Table three indicates that the difference may be an intermittent occurrence.

The Fort Frances sample was taken in the farm area for the most part and the staff say that most of the animals went to the locker in Fort Frances. This fact puts the sample more or less in the same class as that taken in the locker at Kenora. If this is so then method of sampling is not the reason for the difference in Fort Frances. The difference seems most likely due to habitat.

The use of separate checks in each District appears to have obtained a more intimate contact with the hunt without incurring any serious disadvantage.

INFORMATION ON BOUNTIES ON RED FOX PAID BY PRINCE EDWARD COUNTY

by
A. T. Cringan

Last July 18th, I obtained from Mr. J.P. Williams, County Treasurer, Prince Edward County, certain information relating to bounties on Red Fox paid by Prince Edward County.

No bounty was paid from 1940 until 1948. I did not obtain any information for years prior to 1940.

Bounty has been paid during all, or part of each year since 1949. Amount of bounty and number of foxes in the County, the area of which is 389 square miles, were as follows:

Year	Bounty	Number of foxes bountied	Number bountied per square mile
1949	$3.00	226	0.58
1950	$3.00 then $2.00	174	0.45
1951	$2.00 then $3.00	201	0.52
1952	$3.00	528	1.36
1953	$3.00	488	1.26
1954	$3.00	553	1.42
1955	$2.00	494	1.27
1956	$2.00	469	1.20
1957	$2.00	500 to 600	1.29-1.54

It can be seen that there has been a stabilized production of foxes for bounty purposes of between 1.20 and 1.54 foxes per square mile per year for the past six years.

I may be worthwhile to contrast this level of production with certain others that have been reported upon:

Source	Place	Years	Production of foxes per sq. mile per year
This letter	Prince Edward County	1952-57 (Bounty)	1.20-1.54
Switzenberg (1951)	Upper Peninsula, Michigan	1947-48 (Bounty)	0.31
" "	North half, Lower Pen., Michigan	1947-48 (Bounty)	0.85
" "	South half, Lower Pen., Michigan	1947-48 (Bounty)	0.45
Edwards & Cowan (1957)	boreal forest, BC	20-year average (fur)	0.06
Peterson & Crichton	Chapleau Dist.	6-year average (fur)	0.08

The following population densities mentioned by Trippensee (1953) are worth noting:

Source	Place	Fox population per sq. mile
Trippensee (1953)	Maine	about 3
Grinnell et al (1937)	California	about 1
Sheldon (1950)	New York	(average of 3 (maximum of 7or 8

A population of at least 4 or 5 foxes per square mile must exist in Prince Edward County in order to permit this sustained yield of foxes for bounty purposes. Our observations in the field confirm that there is indeed a high population in the county, although I am unable to suggest the actual population density.

In summary, it may be said that: "There has been a high and possibly stable population of Red Foxes in Prince Edward County for the past six or seven years. A bounty of $3.00 or $2.00 per fox has been paid at most times during the past 9½ years. The bounty system, in this instance, has apparently been unsuccessful in reducing the fox population below its high level".

WATERFOWL CAUGHT IN MUSKRAT TRAPS IN PATRICIA WEST AND PATRICIA CENTRAL DISTRICTS, 1957-58 SEASON

by
D. W. Simkin

It is believed that considerable mortality to waterfowl, ducks in particular, is caused by these birds being caught in muskrat traps in the spring trapping season. In order to get an evaluation of the mortality caused by this factor all trappers interviewed at the annual spring trappers meetings throughout the Patricias were queried with regard to the number and species of waterfowl which they accidentally caught in their muskrat traps. This information was recorded on a sheet similar to the attached.

The main purpose of the survey was to determine:

(1) How many waterfowl are trapped in the spring.
(2) What species are most susceptible to losses in muskrat traps.

In addition to gaining information on these points, it was also found that information of this type is at least potentially important in determining the areas of greatest duck concentration. Another useful contribution is that the figures gained from the survey might be useful in mapping the breeding range of different species of ducks in the Patricias.

Although all of the trappers were not interviewed at these meetings, a large proportion of the more active ones were. It is believed that the figures obtained from these are fairly representative of the situation within each band area.

How Many Waterfowl Were Trapped in the Spring

Six hundred and forty-two or approximately 77% of the trappers were interviewed in this survey. They trapped an aggregate of 1,103 waterfowl. To determine an estimated total kill the following system was used.

Because waterfowl densities are no doubt different from one band area to another the incidence of trapped waterfowl will also vary. Also, in areas where trapping pressure is greatest more ducks will be taken than in an area of low trapping pressure even though both areas contain the same number of birds. For this reason, it is believed that an estimation of total kill derived by using number of muskrats caught per duck by the interviewed trappers as an index and applying this to the rat kill of trappers not interviewed will give a reliable estimate of the total kill by trappers.

Table I shows the reported kill by band area as well as the estimated kill within each band area. Although 1,543 does not seem to be too large a number to take from a population of game birds as prolific as waterfowl, it must be recognized that these 1,543 are birds from a population which has withstood at least one flight south with its barrages of gunfire along the route, as well as all of the other strains put on waterfowl during the course of a fall and winter (viz: exposure to predation and disease and possible risk of starvation on the wintering grounds).

Hence, if 2/3 of these birds were breeders and there was an assumed sex ratio of 60 males to 40 females and each of the females raised a brood of three to flying stage by the fall the kill of this spring instead of being a reduction of 1,543 as estimated actually decreased the fall population by 2,773.

However, even if these assumptions are correct as far as Canadians are concerned the take is of little consequence as the trapper is probably the only one who will see these birds north of the border. In the areas here discussed waterfowl are fair game at any season. As a result the ducks taken in traps merely saved the trapper the cost of a shotgun shell. (It is significant that not one trapper reported releasing birds caught).

What Species Were Most Susceptible to Trapping Losses

We cannot say with certainty which species are most susceptible from the data here reported as no estimates of species composition of waterfowl during the spring trapping season are available for comparison. However, the high proportion of mallards 69% (see table II) in the kill does indicate that this species is very susceptive to trapping losses. As the mallard is the most common pond duck nesting in the areas surveyed and is more likely to be encountered in muskrat habitat than the common diving ducks of the area, it is only natural that they should form a high percent of the loss.

Another pond duck the green-winged teal ranked second in numbers taken in traps. This bird is also a common nester in much of the area and in numbers is second only to the mallard among the dabblers.

Curiously enough the lesser scaup ranked third. This diver is not known to be too common as a nesting species in the areas in which it was trapped in the spring. However, it could very easily be that the breeding range of the lesser scaup extends farther eastward than writers such as Kortright (1942) have described and, in reality, is as common a breeder as its incidence in rat traps in the Patricias would seem to indicate.

It was interesting also to find that Canada geese are not immune to rat trap losses. The five taken in the Fort Severn band area were trapped by one trapper who strangely enough caught nothing but the five honkers in his traps.

Distribution of Waterfowl

Using the ratio of rats trapped per waterfowl as an index of waterfowl concentration in band areas the distribution is as shown in diagrams I and II.

Distribution of Breeding Ducks - See Table II

Undoubtedly the mallard is the most important breeding duck in the Patricias comprising 69% of the total number of ducks trapped last spring. The only band area which reported more birds of a species other than mallard trapped was Fort Severn, where pintails formed the bulk of the kill. This is consistent with my own observations last August when I found more pintails very common in the coastal area about Goose Creek 10 miles southeast of Fort Severn.

The lesser scaup was a species frequently caught throughout the region, however, I do not believe that the wide distribution of this species as indicated by trapped birds is indicative of its breeding distribution. Possibly in some of the areas a fair number of lesser scaup do breed.

It is felt that if this type of survey were carried out each spring trends in waterfowl population could be determined. Presumably when we get to the point of managing our waterfowl crops intensively or when the kill by rat trappers is deemed to be excessive preventive measures could be taken to cut down the loss from this source. However, it appears that this situation is far in the future yet and the condition now is anything but critical.

TABLE I - Waterfowl Trapped In Muskrat Trap Statistics

Band Area	No. of Trappers Inter-viewed	No. of Rats Trapped & Re-ported	Total No. Rats Trapped By Band	Rats Trapped Trapper Inter-viewed	Water-fowl Repor-ted Trapped	Rats Trapped Per Water-fowl	Estimate of Water-fowl Trap-ped
Patricia Central							
Big Trout Lake	42	1777	2011	42	30	59	36
Fort Severn	28	455	477	16	29	16	30
Fort Hope	22	1177	1197	54	14	84	14
Lansdowne	83	4092	5146	49	154	27	194
Big Beaverhouse	55	1658	1670	30	81	20	20
Bearskin	30	1550	1610	52	43	36	45
Kasabonica	28	1103	1097	41	33	33	33
Pickle Lake	31	8137	899	27	14	60	15
Osnaburgh	26	5038	187	21	35	15	123
Sachigo	30	2143	2728	105	40	78	51
Shamattawa	7	193	193	28	4	48	4
TOTAL	382	15523	17915		477		565
Patricia West							
Cat Lake	5	468	1394	94	15	31	45
Lac Seul	24	420	651	18	3	140	5
Deer & Sandy Lake	37	4342	6758	117	222	20	240
Pekangikum	102	6194	6270	61	168	37	169
Little Grand Rapids	21	705	766	34	18	39	20
Island/Red Sucker	34	2099	3484	62	132	16	218
Round Lake	15	1152	3387	77	57	20	170
Red Lake	22	602	602	27	11	55	11
TOTAL	260	15982	23312		626		178
GRAND TOTAL	642	31505	41227		1103		1543

TABLE II - Waterfowl Species Caught In Rat Traps

	Mallard	Pintail	G. W. Teal	B. W. Teal	Black	Baldpate	Amer. Gold. Eye	Less. Scaup	Bufflehead	Amer. Merg.	Miscellaneous #	Unidentified	Canada Goose
Patricia Central													
Big Trout Lake	19	-	3	3	-	-	-	4	-	1	-	-	-
Fort Severn	5	15	3	-	-	-	-	-	1	-	-	-	5
Fort Hope	14	-	-	-	-	-	-	-	-	-	-	-	-
Lansdowne	132	1	4	2	3	-	-	11	-	-	-	-	1
Big Beaverhouse	59	4	5	-	-	1	-	8	3	-	1	-	-
Bearskin	27	-	10	1	-	-	-	1	-	-	1	3	1
Kasabonica	27	-	-	-	-	1	-	3	-	2	-	-	-
Pickle Lake	11	-	3	-	-	-	-	-	-	-	-	-	-
Osnaburgh	20	-	-	-	-	-	-	1	-	2	-	12	-
Sachigo	26	-	12	-	-	-	-	2	-	-	-	-	-
Shamattawa	3	-	1	-	-	-	-	-	-	-	-	-	-
TOTAL	343	20	41	6	3	2	-	30	4	5	2	15	7
Patricia West													
Cat Lake	13	-	-	-	-	-	2	-	-	-	-	-	-
Lac Seul	3	-	-	-	-	-	-	-	-	-	-	-	-
Deer & Sandy Lakes	129	-	18	-	-	-	10	3	3	-	4	55	-
Pekangikum	106	-	-	-	-	-	29	6	-	-	-	27	-
Little Grand Rapids	14	-	1	-	-	-	-	3	-	-	-	-	-
Round Lake	45	-	2	-	-	-	5	5	-	-	-	-	-
Island/Red Sucker	101	-	10	-	-	-	-	16	5	-	-	-	-
Red Lake	11	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	422	-	31	-	-	-	46	33	8	-	4	82	-
GRAND TOTAL	765	20	72	6	3	2	46	63	12	5	6	97	7

- Includes 4 surf scoter, 1 ring neck and 1 hooded merganser.

DIAGRAM I - Patricia Central District

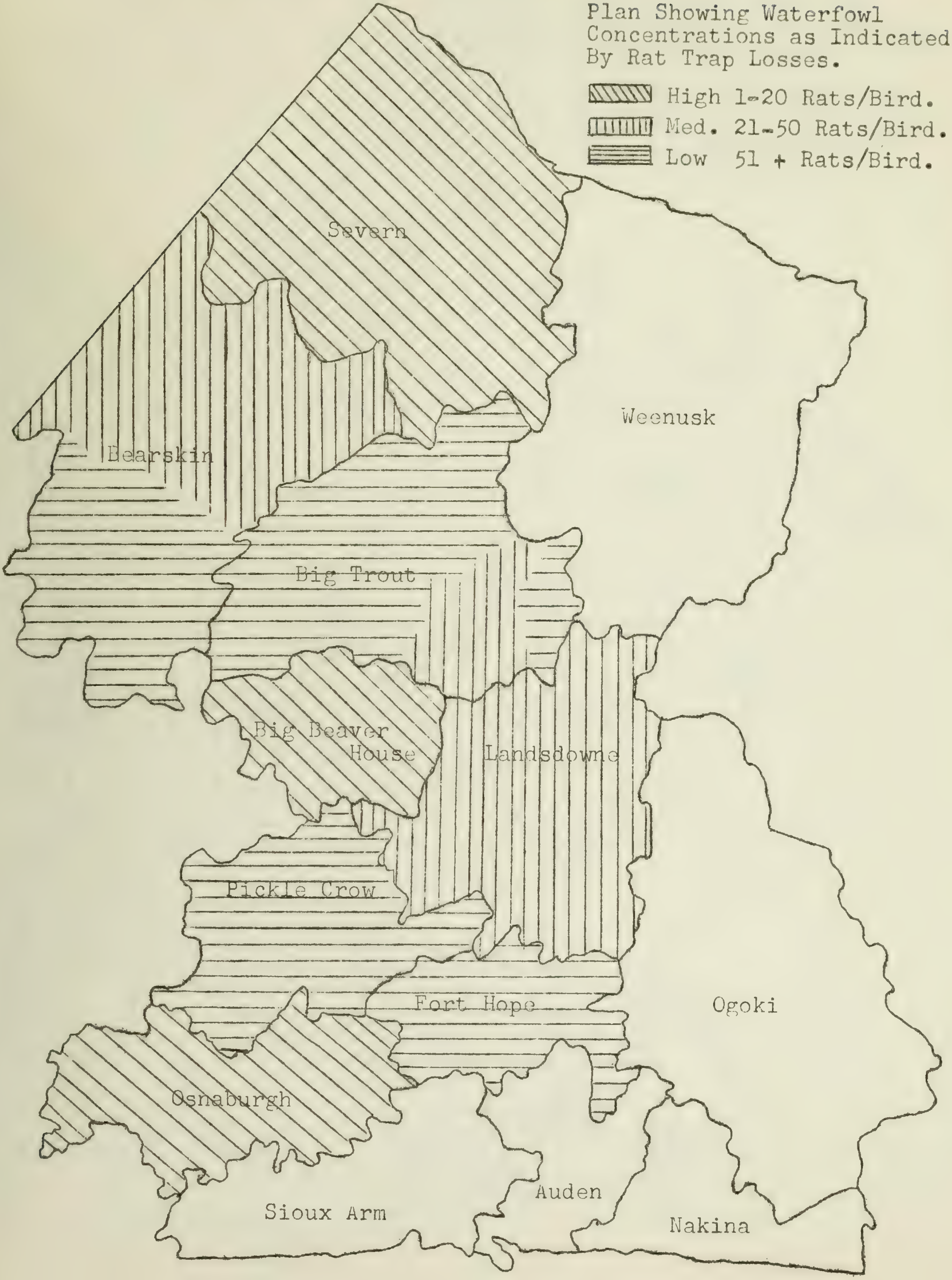
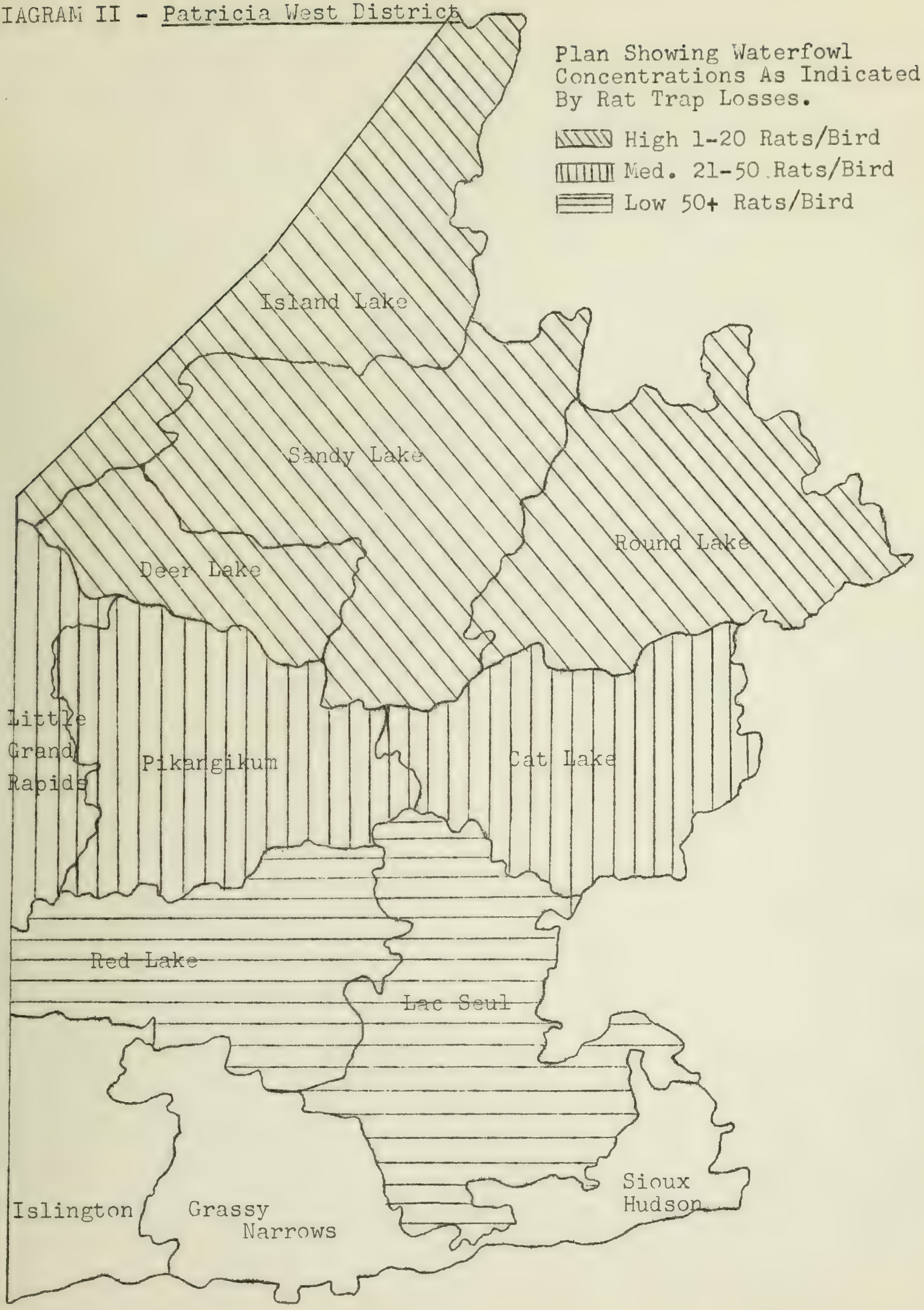


DIAGRAM II - Patricia West District



Ducks Accidentally Taken in Muskrat Traps

Name ____

Address ____

1. How many ducks did you catch this year ______________
2. How many were you able to release ________________
3. What kind were the ducks you caught ______________
4. Trapline Area number __________________________
5. Did you catch any banded ducks ________________

Please complete this form whether you caught any ducks or not. It is as important to us to know how many trappers did not catch ducks as did.

This information will be treated as strictly confidential and will be used for waterfowl management purposes only.

____

WATERFOWL BANDING, GOGAMA DISTRICT, 1958

by
H. P. Endress

This year, duck banding was again carried out on the upper reaches of the Grassy River, continuing the program that began in 1956. This year's operation was carried out by members of the Gogama Fish and Wildlife staff.

Trap sites were first baited on August 7 and 8. The sites were re-visited on September 15, and traps were partially erected so that ducks coming to the bait would become accustomed to them. During the latter visit about 35 ducks were flushed in the six-mile long trapping zone. On August 18, the crew set up residence at Washagami Lake and the closing of traps commenced. The table below compares the duration and success of banding operations for each of the three years the station has been in existence:

	Banding Commenced	Banding Ceased	Total Days	Total Ducks Banded
1956	Aug. 23	Sept. 15	24	462
1957	Aug. 16	Sept. 6	22	206
1958	Aug. 19	Sept. 11	24	285

Again, trapping success fluctuated markedly from day to day (see the accompanying graph) for no apparent reason. Weather throughout the period was generally cloudy and unseasonably cool. Bait acceptance at two of the six traps did not take place until midway in the period.

No casualties whatever occurred this year. In the two previous years a few ducks were lost to predators and injuries suffered in trying to escape from traps.

It is evident that corn-baited wire traps are selective, for we do not catch ducks in anything like a natural adult: juvenile ratio. In 1957 the ratio of adult females to juveniles among the black ducks trapped was 1:64 and this year's ratio was 1:25. The adults that raised the juveniles that enter our traps were the members of an earlier crop that succeeded in evading thousands of gunners along the flyway, so perhaps they are also too wary to enter wire cages. Of 193 blacks trapped in 1957 only five were adults (one of which we had banded in 1956) and of 269 trapped this year 20 were adults (two carried 1957 bands).

In 1956 trapping ceased 11 days before the hunting season opened and in 1957 the margin was reduced to nine days. This year, the trapping period was extended still further, the last trap being dismantled four days before the season opened. Any bait that

remained was trampled into the mud and the sites were then visited periodically during the next four days. The trap sites appeared to lose their attractiveness to ducks as soon as baiting ceased, perhaps because of the good crop of wild rice that was then at its peak. During the first two days of the hunting season, the seven hunters who hunted in the general area of the banding station shot 14 black ducks, of which three carried bands. As long as hunting pressure in the upper eight miles of the Grassy River continues to be as light as it has been to date, it apparently will be safe to operate a banding station to within a few days of the opening of the hunting season.

Daily Record of Ducks Trapped

	New	Repeats	Daily Total
Aug. 19	6	2 (banded 1957)	8
20	11		11
21	13		13
22	3		3
23	9	3	12
24	12	3	15
25	2	1	3
26	12	6	18
27	15	4	19
28	12	10	22
29	17	6	23
30	15	16	31
31	10	15	25
Sept. 1	7	13	20
2	29	11	40
3	23	18	41
4	9	7	16
5	24	30	54
6	11	18	29
7	8	18	26
8	20	20	40
9	9	12	21
10	6	14	20
11	2	3	5
	285	230	515

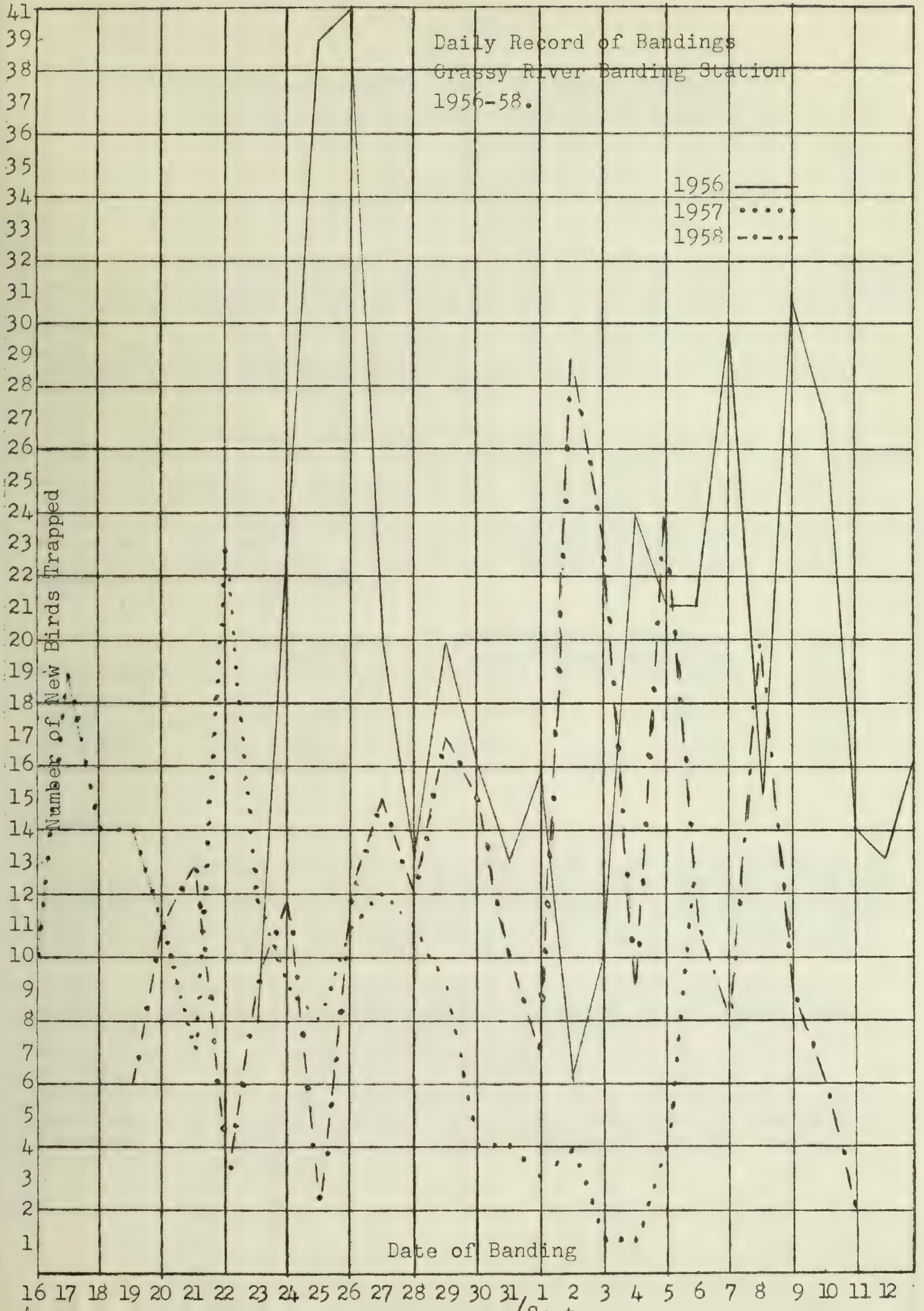
Total by Species

1 Green-winged Teal
2 Blue-winged Teal
2 Hooded Mergansers
269 Blacks
11 Mallards

Species Taken By Age and Sex

	Adult Male	Adult Female	Immature Male	Immature Female
Black Duck	10*	10	130	121
Mallard	1	2	1	7
Green-winged Teal	0	0	1	0
Blue-winged Teal	0	0	1	1
Hooded Merganser	0	0	1	1

* including two carrying 1957 bands.


Daily Record of Bandings
Grassy River Banding Station
1956-58.
1956
1957
1958
Number of New Birds Trapped
41
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Date of Banding
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12

WATERFOWL PRODUCTION SURVEY, GOGAMA DISTRICT - A COMPARISON OF THREE COUNTING METHODS.

by
J. A. Macfie

Summer waterfowl brood counts in the Gogama District have been largely unsuccessful; too few broods were found for the results to be significant. Previous surveys were done from power driven boats. This year, three methods of travel, paddle canoe, aircraft, and power driven boat, were employed on the same survey area on consecutive days in order to determine whether effectiveness could be increased by a change in technique.

The survey area dealt with here is a 17 mile stretch of the Grassy River, between Grassy and Canoeshed Lakes. It is largely a slow moving, marsh-bordered stream of the type generally favored by waterfowl for nesting, and it is a fall concentration area for ducks. The survey by power boat was carried out on July 2nd, the route was then retraced by paddle canoe on July 3rd and the aerial survey was carried out on July 4th. The following table gives the duck counts for each method:

	Incomplete Broods	Complete Broods		Other Ducks
		Number	Total Ducklings	
Power boat	0	5	30	12
Paddle canoe	3	4	27	7
Aircraft	0	2	9	12

Results

Although we found more broods while paddling (probably due to the fact that the slower pace allowed a closer inspection of the marshes) three of them were incomplete broods or only broody females. The net difference between the two types of survey by water craft was in favor of the power boat. The aircraft ranked a poor third.

Several factors may contribute to these disappointing results. The extensive sedge marshes probably conceal many ducks, particularly the blacks, the species in which we are most interested. Sport fishermen use the river extensively during the summer, and several boats were travelling it during every survey, probably reducing observations. Finally, we might have overestimated this waterway as a production area. The birds seen there in the fall may represent the production of a larger section of the surrounding country than was supposed.

LUTHER MARSH GAME BAG CENSUS, OCTOBER 4, 1958

by
R. W. Hummel and T. M. Nicholl

Despite unusually low water, and reported scarcity of ducks the opening day of the duck season at Luther Marsh was one of the most successful since its establishment as a water holding area for the Grand River.

It was not without some trepidation that our patrol staff of 33 men converged on the marsh at 5:30 a.m. Daylight Saving Time on opening day. We remembered last year when shooting commenced long before the opening hour and continued uncontrolled.

Very few hunters entered the marsh this year without first having been checked by a patrol officer - handed a list of instructions (until they ran out), and urged to co-operate to make a good shoot for all. Almost without exception, hunters were pleased to see us. They wanted a controlled shoot.

Except for a very few itchy trigger fingers, most excellent co-operation was given us, and it was not until between 11:45 and 12:00 noon Standard time that shooting really opened up. This is not perfection, and we will strive to better this mark next year. We are satisfied that 95% of our hunters at least are good sportsmen, and do not mind being regimented if it means controlling remaining hunters who cannot curb their patience.

Firing flares at the closing hour was looked upon with favour. Shooting then stopped, except for some who "emptied their guns", and others who were unable to see the flare from their position.

We certainly appreciated the patience of hunters coming through our checking stations after the shoot. We were given valuable assistance by students from the Wildlife Management Course, Ontario Agricultural College, Guelph.

The following data were collected on October 4th, 1958, after the opening day of the duck season in Luther Marsh:

TABLE I - Composition of Bag

Species	Male	Female	Others	Total	Percent of Total Kill
Black	90	90	206	386	25.21
Mallard	128	192	172	492	32.13
Green-winged Teal	61	120	84	265	17.30
Blue-winged Teal	15	48	67	130	8.49
Redhead	7	6	8	21	1.37
Lesser Scaup	5	20	4	29	1.89
Gadwall	9	18	5	32	2.09
Pintail	7	21	20	48	3.13
Shoveler	1	2		3	.19
Wood Duck	3	1	2	6	.39
Ring-necked Duck	1	3	10	13	.84
Baldpate	2	6	7	15	.97
Canvasback			2	2	.13
Bufflehead			1	1	.06
Ruddy			6	6	.39
Hooded Merganser			13	13	.84
R. B. Merganser			1	1	.06
Coots			67	67	4.37
Snipe			3	3	.19

TABLE II - Hunter Success

Year	Hunters Checked	Ducks Checked	Parties Using Dogs	Ducks Lost	Ducks Found	Hunter Success
1953	207	258	11	127	4	1.2
1954	729	494	22	127	23	.67
1955	639	501	16	178	3	.78
1956	589	613	17	182	8	1.04
1957	426	246	15	69	4	.58
1958	918	1533	17	342	16	1.67
TOTAL	3508	3645	98	1025	58	5.94÷6=.99

TABLE III - Sex Ratio Observed

Species	Male	Female
Black	90	90
Mallard	128	192
Green-winged Teal	61	120
Blue-winged Teal	15	48
Pintail	7	21
Lesser Scaup	5	20
Gadwall	9	18

TABLE IV - Age Ratio Observed in 356 Ducks Checked

Species	Adult Male	Juvenile Male	Adult Female	Juvenile Female	Adult	Juvenile
Black	29	15	25	13	54	25
Mallard	37	5	37	18	74	23
Green-winged Teal	18	10	34	14	52	24
Blue-winged Teal	2	4	6	17	8	21
Scaup	1	4	5	5	6	9
Gadwall	4	5	6	6	10	11
Pintail	3		10	3	13	3
Baldpate	1				1	
Wood Duck	3		1		4	
Ring-necked Duck	1			3	1	3
Shoveler			1	1	1	1

TABLE V - Species Composition For Five Year Period - Luther Marsh

	1953		1954		1955		1956		1957		1958	
Species	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Black Duck	148	35	49	9.9	136	26.5	163	26.5	55	22	386	25.21
Mallard	74	17	53	10.7		17.5	155	25.2	57	23	492	32.13
Green-winged Teal	33	8	148	29.9	104	20.7	100	16.3	8	3	265	17.30
Blue-winged Teal	79	19	125	25.3	91	18.1	64	10.4	24	10	130	8.49
Pintail	10	2	2	.4	8	1.5	22	3.5	1		48	3.13
Ruddy			8	1.6	13	2.5	13	2.1	11	4	6	.39
Bluebill (Scaup)			2	.4	11	2	12	1.9	3	1		
Baldpate			1	.2	17	3.3	10	1.6	3	1	15	9.7
Ring-necked Duck			9	1.8	10	1.9	9	1.4	7	3	13	8.4
Redhead	79	19			9	1.9	6	.9	7	3	21	1.37
Wood Duck			17	3.4	3	.5	5	.8			6	.39
Goldeneye			2	.4								
Gadwall							5	.8			32	2.09
Bufflehead									1		1	.06
Merganser			4	.8	10	1.9	3	.4	3	1	14	.85
Canvasback							1	.1			2	.13
Coot			64	12.9			35	5.7	54	22	67	4.37
Shoveler			2	.4							3	.19
Snipe											3	.19

In table 3, the sex ratio between the males and females Green-winged Teal is significant, using chi square test ($x^2=4.4$) with 1 degree of freedom between 0.050 - 0.025), but in Table 4, the sample of carefully sexed green-winged males and females 28.49 is not significant, the samples are questionable as to size. It would appear that there is an error in aging techniques, especially if the anus examination is not employed.

TABLE VI - Observed Age Ratio

	1957	1958
Species	Adult : Juvenile	Adult : Juvenile
Black	27.12	54.25
Mallard	39.12	74.23
Blue-winged Teal	5.9	8.21

In the above table, the comparison between 1957 and 1958 kills of Black, Mallard and Blue-winged Teal is recorded. On such a small sample, much is questionable, since some difficulty may have been experienced in the sexing of black ducks and immature teal. In assuming the figures are significant, the lack or absence of immature Mallards and Black ducks is very noticeable, though in the Blue-winged Teal, the ratio of adult to juvenile is as expected.

ANGLING DATA FROM THE NOTEBOOK OF A LAKE NIPIGON OUTFITTER, 1952-57

by
R. A. Ryder

In 1952 a number of notebooks were circulated among several outfitters on Lake Nipigon, with the intent that they should record the catches made by their angling parties. Unfortunately, only one man conscientiously kept an accurate account of all fish captured by angling parties outfitted by him. The following data were obtained from six years of records found in his notebook.

Over the six-year period, 1952 to 1957 inclusive, a total of 181 angling parties consisting of 749 anglers were outfitted. These anglers were chiefly non-residents seeking trophy fish. In all, four species were recorded, two occurring frequently in the catches (pike and pickerel), the other two occurring only rarely (speckled trout and lake trout). It is believed that pike, and occasionally pickerel, were the principal species sought, the trout being taken incidentally to these. Combined data from the fishery for the six year period are shown in Table 1.

Pike dominated the catch both in numbers and weight. The fact that the average pike weight was 8.9 pounds seems to verify the idea that primarily trophy fish were sought. A total of more than eighteen tons of pike were captured over the six-year period.

TABLE I - Angling Success for a Six-year Period On Lake Nipigon, 1952-1957.

Number of Anglers	749
Number of Angler-days	2,910
Average Number of Days Per Party	3.9
Average Number of Anglers Per Party	4.1
Number of Pike	4,176
Total Weight of Pike	37,133 lbs.
Average Weight of Pike	8.9 lbs.
Number of Pike Per Angler-Day	1.44
Number of Pickerel	2,742
Total Weight of Pickerel	9,704 lbs.
Average Weight of Pickerel	3.5 lbs.
Number of Pickerel Per Angler-Day	0.94
Number of Speckled Trout	102
Number of Lake Trout	11
Percentage of Anglers With Limit Catches of Pike	80.6% *
Percentage of Anglers With Limit Catches of Pickerel	55.0% *

* Includes only those cases where everyone in the party obtained a limit catch.

In numbers, the pickerel catch amounted to about three-quarters that of the pike, but these totalled only a little more than eight tons. Nevertheless, the average weight was substantial at 3.5 pounds per pickerel.

Speckled trout constituted only a very small portion of the catch, 102 fish in all. This was thought to be unusual as Lake Nipigon still produces good speckled trout fishing in season. It is assumed that most of the angling parties did not seek speckled trout as a primary target and that most of the ones taken were done so incidentally while fishing for pike or pickerel.

Only eleven lake trout were captured in the six years covered by the creel data. This was expected as both angling and commercial fishing for this species has been extremely poor in recent years.

The number of pike and pickerel taken per angler-day (Table 1) seems inordinately low upon first consideration. We must remember, however, that only one day's legal catch may be in possession of an angler, in this case six pike and six pickerel. Therefore while a legal limit of both is often obtained the first day, two or three more days are usually spent fishing for bigger fish. Quite often a number of the smaller fish are eaten or released, allowing the angler to fish until he again reaches his legal limit

Angling Success by Year - (Table 2)

The number of anglers fishing each year over the six-year period has remained fairly constant. The catches while fluctuating slightly from year to year show neither a general pattern of decline nor incline. In short, the fishery has remained relatively stable over the sampling period. The slight fluctuations observed in some cases in the catch can possibly be accounted for by other variables such as the number of anglers fishing and the number of days fished. It is not necessarily a reflection of the status of the fish populations.

TABLE 2 - Angling Success by Year, Lake Nipigon, 1952-1957.

	1952	1953	1954	1955	1956	1957
Number of Anglers	131	133	119	124	133	107
Number of Angler-Days	485	528	480	471	509	437
Number of Pike	688	698	638	736	764	652
Total Weight of Pike	6330	5535	5013	7330	7300	5625
Average Weight of Pike	9.2	7.9	7.9	10.0	9.6	8.6
Pike Per Angler-Day	1.41	1.32	1.33	1.56	1.50	1.49
Number of Pickerel	415	502	518	471	420	416
Total Weight of Pickerel	1465	1930	2081	1405	1328	1495
Average Weight of Pickerel	3.5	3.8	4.0	3.0	3.2	3.6
Pickerel Per Angler-Day	0.85	0.95	1.08	1.00	0.83	0.95
Number of Speckled Trout	7	2	25	26	12	30
Number of Lake Trout	7	0	3	0	0	1

An interesting phenomenon appears in the data for the average weight of pickerel captured. A steady increase is noticed from 1952 (3.5 pounds) to 1953 (3.8 pounds) to 1954 (4.0 pounds). This quite possibly demonstrates a single dominant year class for this three year period that has the greatest frequency of occurrence in the angler's creel. A sharp average drop in weight is noted, from 4.0 pounds in 1954 to 3.0 pounds in 1955. Again following the years from 1955 through 1957 we notice a steady increase in the average weight of the pickerel, perhaps indicating another dominant year class for that period.

In checking the average weights of the pike over the six-year period, there is no such indication of a dominant year class being involved.

While the numbers of speckled trout seemed to have increased in the creel returns for the last four years, they still form an insignificant portion of the catch. It is probably not an indication that speckled trout are becoming more abundant in the lake, but rather shows the effect of the selectivity of the angler in his preference for certain fish species.

Angling Success By Month

According to Table 3, pike fishing remained at the same level during the five month period fished, with the exception of a small decline in July. September had a slight edge in the numbers of pike caught, but they averaged smaller than those in the four preceding months.

TABLE 3 - Angling Success By Month, Lake Nipigon, 1952-1957.

	May	June	July	Aug.	Sept.
Number of Anglers	75	179	160	159	174
Number of Angler-Days	281	699	647	622	661
Number of Pike	412	1009	809	922	1024
Total Weight of Pike	3740	9245	7143	8180	8825
Average Weight of Pike	9.1	9.2	8.8	8.9	8.6
Pike Per Angler-Day	1.47	1.44	1.25	1.48	1.55
Number of Pickerel	132	879	888	787	56
Total Weight of Pickerel	504	3195	3305	2503	197
Average Weight of Pickerel	3.8	3.6	3.7	3.2	3.5
Pickerel Per Angler-Day	0.47	1.26	1.37	1.27	0.08
Number of Speckled Trout	18	73	5	1	5
Number of Lake Trout	2	2	2	0	5

Pickerel fishing was definitely at its best during June, July and August, dropping to an extreme low of 0.08 fish per angler-day in September. May was also a relatively poor month to catch pickerel.

It appears significant that 72% of all speckled trout taken were caught in June. This again is an indication of the selectivity of the angler, as late August and September are generally considered to be the best times to fish for speckled trout in Lake Nipigon.

The lake trout data are too small to be of use in determining the best month to fish for this species.

Conclusions

Because of the nature of this sport fishery, it is difficult to compare with other creel census reports. Number of fish per angler-day, a common means of comparison, means very little in the present study because each angler could only retain in his possession one legal day's limit but fished an average of nearly four days. Hence, quite often the last two or three days of the trip were spent in looking for larger fish, no record being kept of those eaten or released. This six-year study does, however, lead us to some definite conclusions.

1. Both pike and pickerel fishing may be considered good, complete or near complete bag limits being taken in most cases. (This is, perhaps, a reflection on the quality of the guiding).

2. The average weight of both the pike and the pickerel seems large, perhaps due to the release of the smaller ones in the search for trophy fish.

3. Speckled trout formed an extremely small, and lake trout an insignificant portion of the catch, this possibly due to the preferences of the anglers.

4. The angling harvest of both pike and pickerel has remained relatively stable over the six-year period.

5. It is possible that two dominant year classes of pickerel constituted the bulk of the catch from 1952 to 1957.

6. Pike harvest by angling remained at about the same level over each five month fishing period. Pickerel fishing was at its poorest during May and September.

Acknowledgments

Without the conscientious efforts of the late Mr. Herb Goodman, these records would not be available. G. C. Armstrong District Biologist, initiated this study in 1952.

YELLOW PICKEREL TAGGING PROGRAMME, LAKE ERIE DISTRICT, 1957.

by
J. D. Roseborough

On April 3rd, 4th and 5th District personnel along with personnel from Research Division carried out a tagging programme on the Thames River at Prairie Siding, 8 miles from the mouth of the River. The following District personnel were engaged in the work:

O. L. Mellick
T. A. Carter
E. A. Roberts
D. C. Martin
A. H. McIntyre
J. D. Roseborough
G. T. Greenwood

along with R. G. Ferguson and one assistant from Maple.

Tagging and sampling equipment were supplied by Research including the tags. The following data were obtained for each fish tagged:

1. Length (Total and fork length)
2. Scales sample
3. Tag number, location and date
4. Remarks
    a) presence of Lymphocystes
    b) presence of Lamprey scars
    c) presence of bleeding at tag
    d) presence of damage or deformities
    e) appearance of fish (i.e. similar to Lake Huron or Lake Erie pickerel).

The fish were obtained from the nets of commercial seine operators in the vicinity of Prairie Siding. The operators are normally required to return pickerel caught in their hauls, but were kind enough to deposit all pickerel in live boxes at the fishery for the use of the tagging crews. Good cooperation was received from all seine fisheries approached for assistance (Ouellette, Crowe and Sullivan).

The tagging operation was organized expediently by the local Conservation Officers a short time before the pickerel run occurred. After three days, by which time 901 fish were tagged, the catch fell off and tagging was discontinued. It was recommended that future tagging be started immediately after the ice in the river had broken up, in order to obtain more fish in the same short interval. Of the 901 fish tagged, 898 were yellow pickerel, two were sauger, and one was a northern pike.

Returns

1. Returns of the tags by fishermen were recorded at District Office and at Maple. The attached map (s) of Lake St. Clair and Lake Huron indicate the location and date of recapture during April - December, 1956. The greatest percentage of these were returned to local Conservation Officers in the areas involved. A total of 63 tags have been returned to date.

2. Of the 63 returns, 34 were made by anglers of which 28 were United States residents and six were local Ontario residents.

   Of the 29 returns made by commercial fishermen, 2/3 were in the vicinity of the Thames River Mouth, in the Thames River or in Lake St. Clair.

   These returns indicate the importance of the angler in reporting recaptures, and specifically the U. S. angler. Certainly the location of recaptures on the accompanying map would indicate much less if anglers' recaptures were not recorded. The most efficient means of reporting recaptures by U. S. anglers is required.

3. About 10% (44) of 430 yellow and red plastic tags attached with monofilament nylon on the supra-occiptal bone of the head were returned.

   About 4% (19) of 470 monel metal ring tags attached to the mandible were returned.

Comparison of plastic and jaw tag returns

	Plastic	Jaw
Total tagged	430	470
Total returns	44	19
Percent returns	10%	4%
Commercial returns	24	5
Angler returns	20	14

It is believed that anglers generally examine their fish closely enough to perceive a jaw tag, and will return either type at the same rate. It appears that greater mortality may occur as a result of jaw tagging. It appears that only about 1/3 of the jaw tagged recaptures might have been detected in the commercial catch. These returns indicate the desirability of using plastic tags in this work. Further returns of tags in seining in the Thames River should provide more information to indicate whether jaw tags cause greater mortality, (or whether jaw tagged fish are less likely to be taken in angling due to interference with the fishes' feeding, or some other factor).

4. Lymphocystes

Seventy of 900 fish examined exhibited a skin disease on parts of their bodies which was recorded as Lymphocystes. Three of these fish subsequently recaptured were not reported to show this disease, although four fish which were not infected on tagging, were reported on recapture to have "sores" or "fungus" on tails and fins. It would appear therefore that this virus disease of the lymph glands is of a temporary nature.

5. Damage

Two of the fish recaptured were bleeding as a result of tagging, but the returns did not indicate permanent damage. Only one return indicated flesh damage at the tag (plastic) attachment.

6. Movements

1) Tag returns indicate some fish moved up-river to Moraviantown until April 15th. One fish tagged on October 25, 1955 in Lake St. Clair a few miles north of the mouth by Ohio Taggers, was recaptured on March 29, 1956, at Moraviantown.

2) April and May recaptures were made in Lake St. Clair close to the Thames River Mouth, with the exception of one taken by Purdy Fisheries in Lower Lake Huron.

3) June recaptures were common in the St. Clair River and its lower branches, and one was taken at Blue Point in Lake Huron.

4) July and August returns were scattered more widely with three recaptures near the Detroit River portion of Lake St. Clair. No recaptures were made in the Detroit River in spite of heavy angling pressure, indicating a definite up-stream movement.

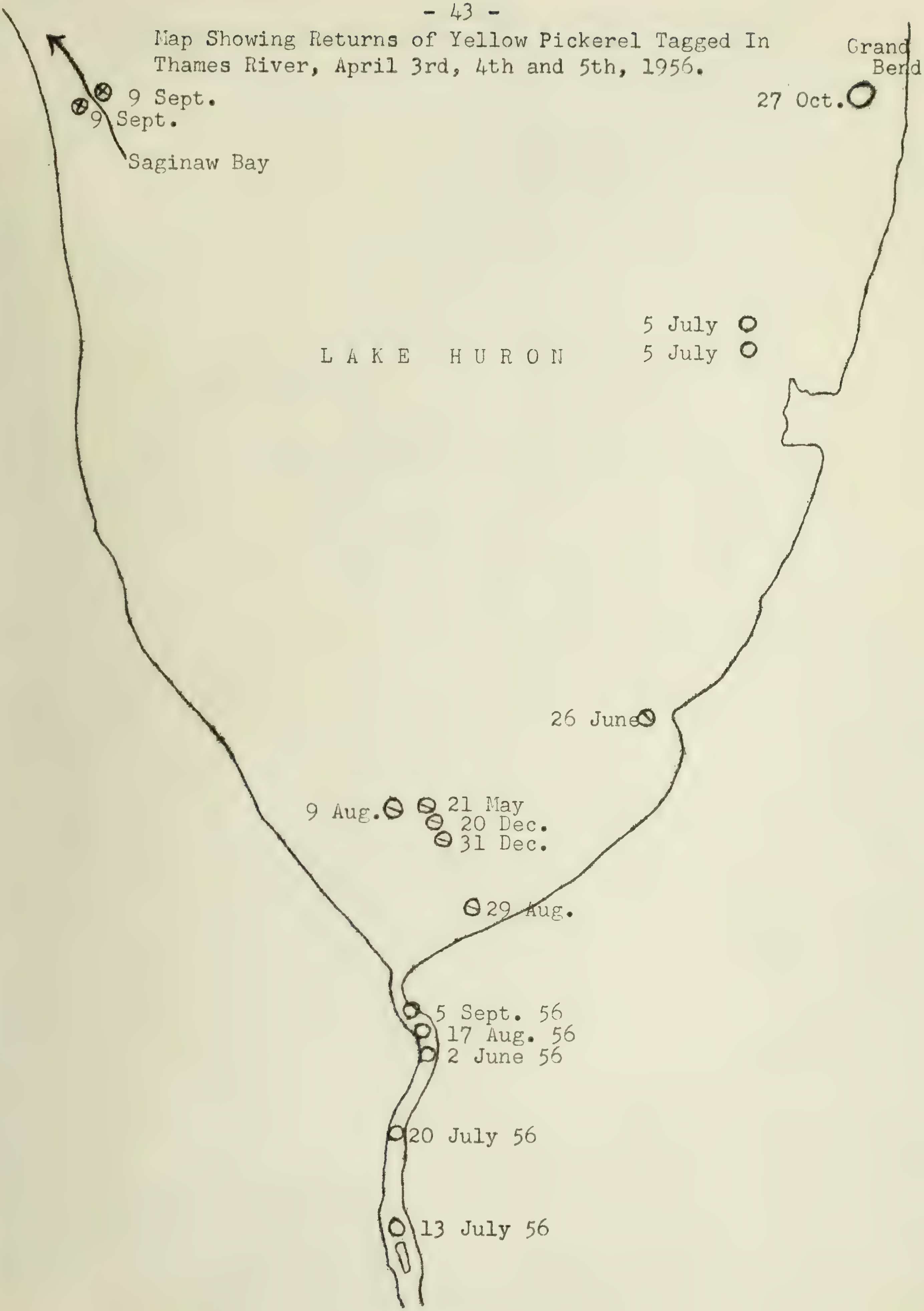
5) All other returns with the exception of one in October in Lake St. Clair and two in September in the St. Clair River, were in Lake Huron.

6) Farthest returns (one positive, one tag lost) were in Saginaw Bay, some 175 water miles from the point of tagging.

This preliminary tagging in the Thames River has provided some information on the movements of yellow pickerel which are believed by local fishermen to be residents of the Thames. Further tagging will be carried out during 1957, in the Thames River. The question whether Saginaw Bay, Lake Huron, and Lake St. Clair fishes move up the Thames River will require tagging in those locations.

In addition to the tagging operation itself, an attempt will be made to trace the fish in the Thames River from the point of tagging.

Map Showing Returns of Yellow Pickerel Tagged In Thames River, April 3rd, 4th and 5th, 1956.



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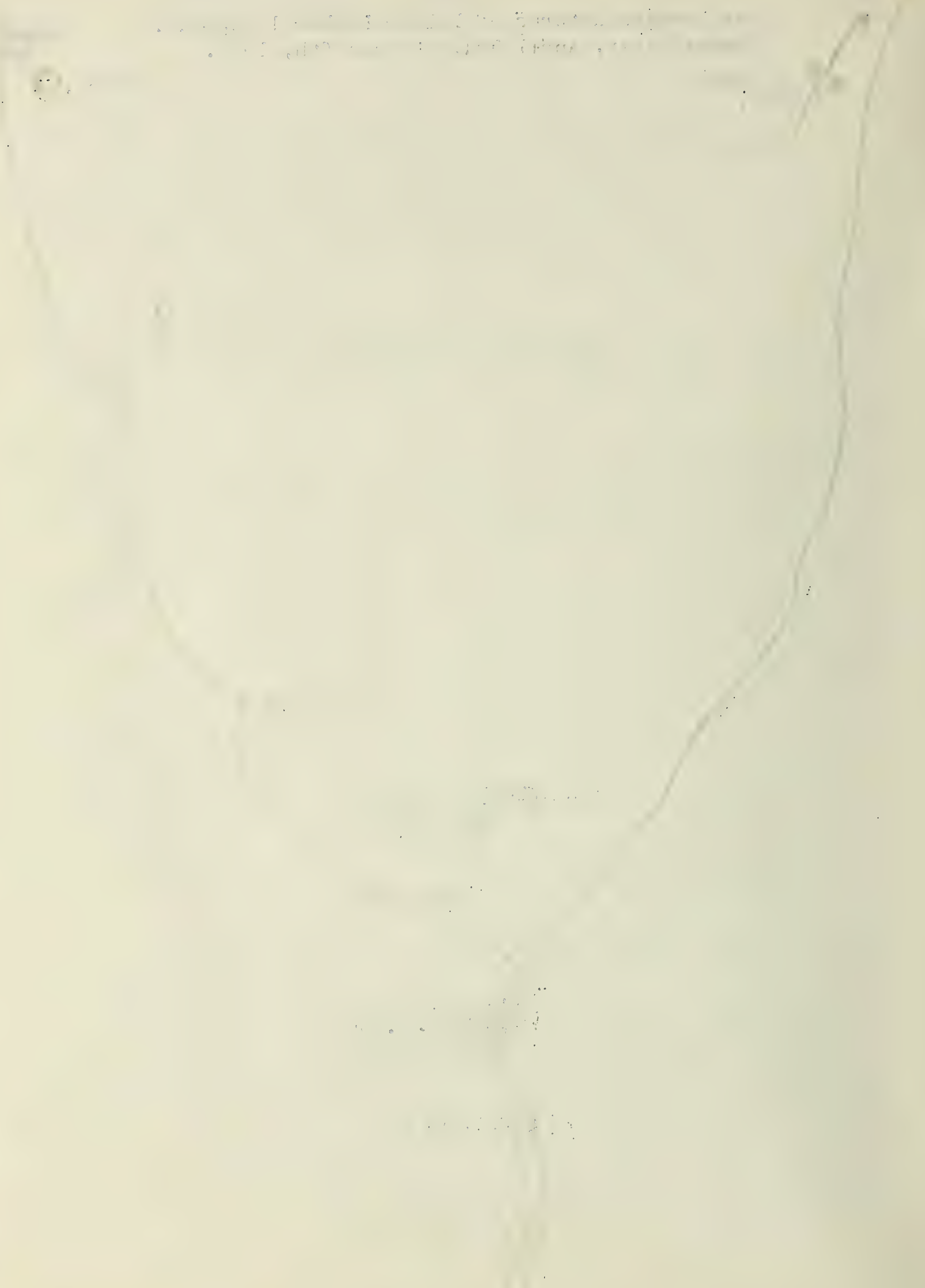
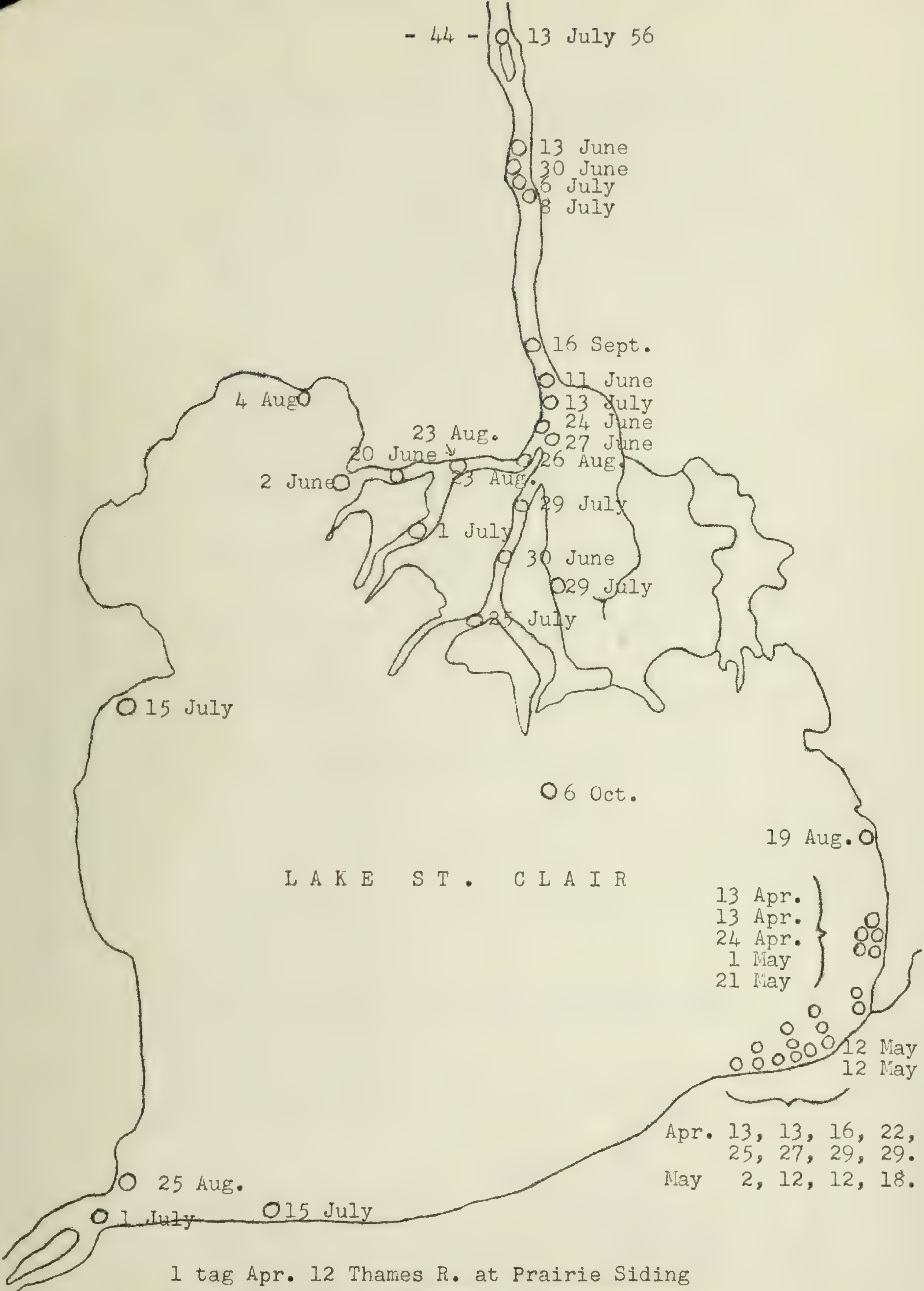
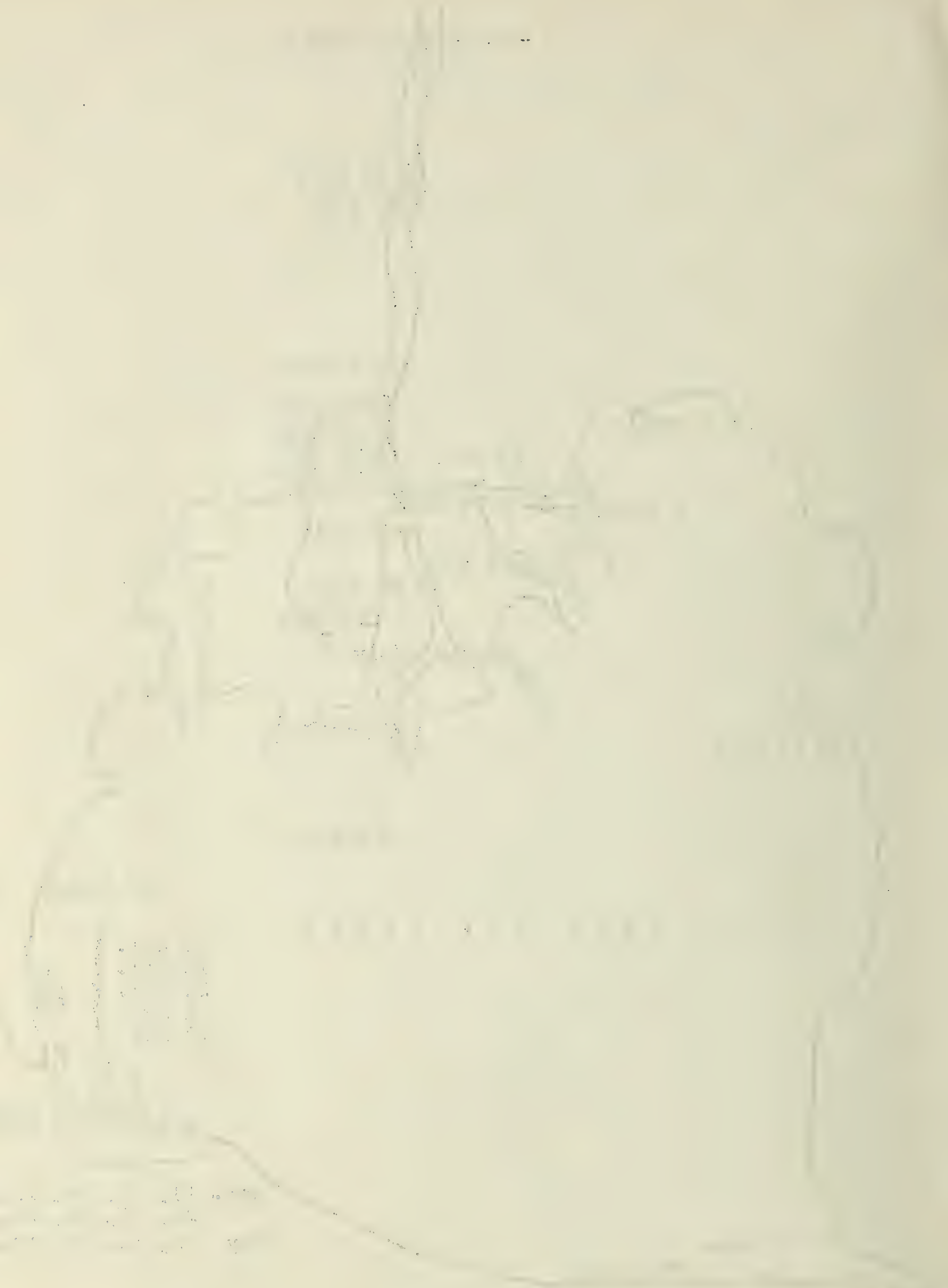




1 tag Apr. 12 Thames R. at Prairie Siding
2 tags Apr. 14, 15 Thames R. Moraviantown



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SUMMARY OF FUR RETURNS BY ONTARIO GAME MANAGEMENT DISTRICTS

COMPILED FROM DISTRICT RETURNS FORM T-14 FOR YEAR 1957-58

	No. of Trap.	Beav. Catch	Bob Cat	Fish.	Arc. Fox	Col. Fox	Lynx	Mar.	Mink	Musk-rat	Otter	Rac.	Sku.	Squir.	Weas.	Bru. Wol.	Tim. Wol.
CHAPLEAU	84	1311	-	96	-	13	5	319	613	1216	110	-	-	-	273	-	-
COCHRANE	135	3617	-	162	-	3	85	618	878	2778	150	-	1	-	812	-	-
FORT FRANCES	228	9723	15	168	-	34	8	68	2301	8084	207	-	20	936	416	13	25
GERALDTON	170	6447	-	92	-	14	29	799	1003	4795	416	-	-	975	410	-	-
GOGAMA	100	1756	-	139	-	3	6	363	795	1975	158	-	-	144	360	-	2
KAPUSKASING	212	8686	-	261	-	16	106	1508	1381	6735	327	-	-	-	1920	-	-
KEMPTVILLE	690	828	-	-	-	90	-	-	453	32856	7	120	0	99	61	1	-
KENORA	521	14010	-	242	-	29	29	98	4817	13191	248	2	8	2081	809	9	22
LAKE ERIE	682	7	-	-	-	305	-	-	695	118520	-	1978	911	12	194	-	-
LAKE HURON	774	44	-	-	-	808	-	-	1454	50367	-	4670	836	148	267	-	-
LAKE SIMCOE	386	1488	-	-	-	186	-	-	1236	24273	21	1273	75	161	84	10	1
LINDSAY	604	5280	-	97	-	130	-	19	1465	30881	126	613	57	134	146	1	4
NORTH BAY	162	5039	-	105	-	17	35	34	1599	6737	159	29	-	-	343	10	12
PARRY SOUND	595	8692	-	173	-	31	-	142	2427	16312	287	345	13	303	844	-	32
PATRICIA CENT.	675	9489	2	54	24	23	54	95	6238	20661	2009	-	17	3854	1647	2	8
PATRICIA EAST	358	7967	-	35	103	70	46	113	2018	15031	1120	-	34	-	1624	-	-
PATRICIA WEST	594	7161	2	122	1	21	465	44	4346	23428	779	-	12	5143	2708	8	27
PEMBROKE	144	3648	-	227	-	30	-	154	1018	6711	137	98	-	22	224	-	7
PORT ARTHUR	201	6917	10	208	-	60	20	426	658	1669	142	-	24	197	615	3	16
SAULT STE.MARIE	220	2619	-	131	-	3	2	99	1182	1182	185	2	-	11	318	-	-
SIOUX LOOKOUT	94	1935	2	52	-	3	10	211	466	1164	83	-	-	129	342	-	-
SUDBURY	195	7295	3	125	2	12	10	12	2257	10752	215	17	-	62	530	20	27
SWASTIKA	204	3098	-	148	-	11	153	48	1126	2418	115	-	1	51	989	2	-
TWEED	486	7109	-	13	-	117	-	-	1505	42898	119	449	1	137	234	4	19
WHITE RIVER	90	2820	1	87	-	2	16	537	906	944	173	-	-	179	240	-	1
TOTALS	8604	126986	35	2737	128	2031	1079	5707	41837	446578	7293	9596	2019	14778	16410	83	217
SEALING REPORT TOTALS		140371		3173			1103	6061	49484		8519						

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